

Lab: Density of Five Elements

Name _____ Period _____

Show your calculations on the back, the *Hup, Two, Three, Four!*

1. Take only one sample at a time, then trade it for another.

2. DO NOT remove the hooks!

Record all data in the table below: Show your calculations on the next page.

3. Mass it to the nearest 0.1 gram.

4. Measure its diameter and length to the nearest 0.1 cm.

5. Calculate its volume in cm^3 .

$$V = \pi r^2 h \dots\dots\dots \pi = 3.14 \dots\dots\dots r = d/2$$

6. Calculate its Mass Density in g/cm^3 .

7. Look up the accepted value in the *Handbook of Physics* (below).

8. Calculate your percentage error:

(Error is the difference between your value and the accepted value).

$$\text{PE} = \text{your error/accepted value} \times 100\%$$

9. Repeat the above for four more samples.

Data Table:

Sample	Diameter	Radius	Height	Volume	Mass	Density	Accepted	%- age error
Symbol	cm	cm	cm	cm ³	g	g/cm ³	g/cm ³	
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Density Table from *The Handbook of Physics*:

The Densities are in g/cm³

<i>Element</i>	<i>Density</i>	<i>Element</i>	<i>Density</i>
<i>Al</i>	<i>2.7</i>	<i>Pb</i>	<i>11.4</i>
<i>Pt</i>	<i>21.5</i>	<i>Os</i>	<i>22.0</i>
<i>Cu</i>	<i>8.9</i>	<i>Ag</i>	<i>10.5</i>
<i>Au</i>	<i>19.3</i>	<i>Sn</i>	<i>7.3</i>
<i>Fe</i>	<i>7.9</i>	<i>Zn</i>	<i>7.1</i>

10. Write a critique on this lab. (Note: a critique is an evaluation of the procedures, outcomes, etc. It is NOT something like "Neat lab, Boom", or "This really sucked".)